

WHAT IS CLAIMED IS:

1. A bottom gate-type thin-film transistor, comprising:

a gate electrode formed on a transparent insulating  
5 substrate;

a gate insulating film overlying said gate electrode;

a semiconductor layer formed on said gate insulating film,  
said semiconductor layer having a source region and a drain  
region doped with impurities, and a channel region; and

10 an interlayer insulating film formed on said  
semiconductor layer, wherein

in said interlayer insulating film, a region in a  
vicinity of at least an interface between at least said  
channel region in said semiconductor layer has an impurity  
15 concentration of  $10^{18}$  atom/cc or less.

2. A bottom gate-type thin-film transistor, comprising:

a gate electrode formed on a transparent insulating  
substrate;

20 a gate insulating film overlying said gate electrode;

a semiconductor layer formed on said gate insulating film,  
said semiconductor layer having a source region, and a drain  
region, impurities being doped and a channel region; and

an interlayer insulating film formed on said

25 semiconductor layer, wherein

both said interlayer insulating film and said  
semiconductor layer are in direct contact each other and are

disposed above said gate electrode.

3. A method for manufacturing a bottom gate-type thin-film transistor on a transparent insulating substrate, comprising  
5 the steps of:

forming a gate electrode on a transparent substrate;  
forming a gate insulating film on said gate electrode;  
forming a semiconductor layer on said gate insulating film;  
10 forming a mask on said semiconductor layer corresponding to said gate electrode;  
doping impurities selectively into said semiconductor layer, using said mask; and  
forming an interlayer insulating film on said semiconductor layer, after removal of said mask.  
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4. A method defined in Claim 3, further comprising the steps of:

removing, after removal of said mask, residue of said  
20 mask, together with a native oxide film formed on said semiconductor layer before formation of said mask.

5. A method defined in Claim 4, wherein removing said native oxide film by a dilute hydrofluoric acid.